

AMENDMENTS TO THE CLAIMS

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Claim 1. (Currently Amended): A laser, comprising:
a lasing chamber,
trivalent titanium ions dissolved in a liquid host within said lasing chamber, and
a first semiconductor pumping device operatively connected to said lasing chamber for optically exciting said trivalent titanium ions dissolved in said liquid host within said lasing chamber, said first semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions dissolved in said liquid host within said lasing chamber,
a second semiconductor pumping device operatively connected to said lasing chamber for optically exciting said trivalent titanium ions dissolved in said liquid host within said lasing chamber, said second semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions dissolved in said liquid host within said lasing chamber,
a first closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host into and out of said first lasing chamber and said second lasing chamber, and
a second closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host into and out of said first lasing chamber and said second lasing chamber.

Claim 2. (Cancelled)

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Claim 3. (Currently Amended): The laser of claim 2 1 wherein said first closed loop circulation system and said a second closed loop circulation system includes a closed loop for circulating said trivalent titanium ions dissolved in a

liquid host into and out of said first lasing chamber and said second lasing chamber includes a pump and a heat exchanger.

Claim 4. (Currently Amended): The laser of claim 2 1, wherein thermally induced optical phase errors are produced and including a system for correcting said thermally induced optical phase errors.

Claim 5. (Currently Amended): The laser system of claim 4, wherein said first closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host including includes a first flow channel and said second closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host includes a second flow channel ~~in said closed loop~~, said first flow channel and said second flow channel being of substantially equal length, wherein said system for correcting said thermally induced optical phase errors includes a said first closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host and said second closed loop circulation system for circulating said trivalent titanium ions dissolved in a liquid host through said first flow channel and said second flow channel in said closed loop so that, whereby said liquid host is divided into two equal lengths ~~along the laser propagation direction~~ and placed in series in the said lasing chamber with the fluid flows, and wherein said first flow channel and said second flow channel are arranged in opposite directions.

Claim 6. (Currently Amended): A laser method comprising the steps of:
providing a lasing chamber,
filling said lasing chamber with lasing liquid containing trivalent titanium ions dissolved in a liquid host,
optically exciting said lasing liquid in the 800 to 900 nm region with a first semiconductor diode and optically exciting said lasing liquid in the 800 to 900 nm region with a second semiconductor diode to provide a powerful laser beam,

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thermally induced optical phase errors being produced by said steps of optically exciting said lasing liquid in the 800 to 900 nm region with a first semiconductor diode and optically exciting said lasing liquid in the 800 to 900 nm region with a second semiconductor diode.

correcting said thermally induced optical phase errors by circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host into and out of said optical cavity lasing chamber and dividing said circulating lasing liquid into two equal lengths and placing said two equal lengths in series arranged in opposite directions, and

circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host through a heat exchanger to cool said lasing liquid containing trivalent titanium ions dissolved in a liquid host.

Claim 7. (Cancelled)

Claim 8. (Cancelled)

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Claim 9. (Currently Amended): A laser system, comprising:

an optical cavity,

a lasing liquid containing trivalent titanium ions dissolved in a liquid host within said optical cavity,

a first semiconductor pumping device operatively connected to said optical cavity for optically exciting said trivalent titanium ions dissolved in a liquid host within said optical cavity, said first semiconductor pumping device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions in the 800 to 900 nm region, and

a second semiconductor pumping device operatively connected to said optical cavity for optically exciting said trivalent titanium ions dissolved in a liquid host within said optical cavity, said second semiconductor pumping

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device comprising at least one semiconductor diode for optically exciting said trivalent titanium ions in the 800 to 900 nm region.

a first closed loop circulation system that provides a closed loop for circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host into and out of said optical cavity, and

a second closed loop circulation system that provides a closed loop for circulating said lasing liquid containing trivalent titanium ions dissolved in a liquid host into and out of said optical cavity, said first closed loop circulation system and said second closed loop circulation system including a pump and a heat exchanger.
